AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A method for adjusting the emission rate of radiation of a source of X-ray radiation comprising:

calibrating the radiation emission rate of the source ~~is calibrated~~ as a function of a voltage applied between first and second emitting elements of the source and as a function of the heating current of the ~~active~~ source in response to the source being active;

supplying the second element ~~is supplied~~ with high voltage relative to the first element;

adjusting a heating current of the second element ~~is adjusted~~ for an expected rate of radiation emission as a function of the calibration; and

carrying out the calibration ~~is carried out~~ by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating current and a first-order polynomial function of the voltage.

2. (original) The method according to claim 1 wherein:
the source of radiation is an X-ray tube;
the first element is an anode of the tube; and
the second element is a cathode of the tube.

3. (currently amended) The method according to claim 2 wherein the calibrating is ~~tube is calibrated as~~ a function of six coefficients a, b, c, d, e, and f that, for a given tube, satisfy the equation:

$$\ln(I_{tube})=a\ I_{ch}^2 \ln(V) + b\ I_{ch}^2 + c\ I_{ch} \ln(V) + d\ I_{ch} + e \ln(V) + f,$$

where ln is a Neperian logarithm; I_{tube} is tube current; I_{ch} is tube heating current; and V is tube voltage.

4. (currently amended) The method according to claim ~~[[2]]~~ 3 wherein:

the tube has a wide focus, a narrow focus, or both; and

the coefficients a, b, c, d, e and f have values given by one of the columns of the following table, or values given by both columns of the following table for a dual-focus tube:

coefficients\cathode	wide focus	narrow focus
a	2.948793	4.517432
b	-7.42477	-11.1148
c	-8.01109	-10.6986
d	29.87146	37.45432
e	5.616099	6.544223
f	-23.3185	-25.8013

5. (currently amended) The method according to claim 2 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the nature of ~~this particular~~ the tube by:

~~in making readings for this particular tube, during several calibration experiments, of measurements of the tube current, the heating current, and the applied high voltage; and~~

~~in~~ carrying out a regression type analysis to determine coefficients α and β with which a heating current I_{ch}real to be applied to the tube is expressed in the form: I_{ch}real = $\alpha.I_{ch}$calib + β, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

6. (currently amended) The method according to claim 3 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the nature of ~~this particular~~ the tube by~~;~~

~~in making readings for this particular tube, during several calibration experiments, of measurements of the tube current, the heating current, and the applied high voltage; and~~

~~in~~ carrying out a regression type analysis to determine coefficients α and β with which a heating current I_{ch}real to be applied to the tube is expressed in the form: I_{ch}real = αI_{ch}calib + β, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

7. (currently amended) The method according to claim 4 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the nature of ~~this particular~~ the tube by~~;~~

~~in making readings for this particular tube, during several calibration experiments, of measurements of the tube current, the heating current, and the applied high voltage; and~~

~~in~~ carrying out a regression type analysis to determine coefficients α and β with which a heating current I_{ch}real to be applied to the tube is expressed in the form: I_{ch}real = αI_{ch}calib + β, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

8. (currently amended) The method according to claim 2 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the aging of ~~this particular~~ the tube by~~;~~

~~in~~ making readings for ~~this particular~~ the tube, during subsequent uses, of measurements of the tube current I_{tube}, the heating current I_{ch}, and the applied high voltage V; and

~~in~~ carrying out a mathematical regression to determine coefficients α and β with which the heating current I_{ch}real to be applied to the tube is expressed in the form: $I_{ch}real = \alpha I_{ch}calib + \beta$, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

9. (currently amended) The method according to claim 3 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the aging of ~~this particular~~ the tube by~~;~~:

~~in~~ making readings for ~~this particular~~ the tube, during subsequent uses, of measurements of the tube current I_{tube}, the heating current I_{ch}, and the applied high voltage V; and

~~in~~ carrying out a mathematical regression to determine coefficients α and β with which the heating current I_{ch}real to be applied to the tube is expressed in the form: $I_{ch}real = \alpha I_{ch}calib + \beta$, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

10. (currently amended) The method according to claim 4 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the aging of ~~this particular~~ the tube by~~;~~:

~~in~~ making readings for ~~this particular~~ the tube, during subsequent uses, of measurements of the tube current I_{tube}, the heating current I_{ch}, and the applied high voltage V; and

~~in~~ carrying out a mathematical regression to determine coefficients α and β with which the heating current I_{ch}real to be applied to the tube is expressed in the form: $I_{ch}real = \alpha I_{ch}calib + \beta$, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

11. (currently amended) The method according to claim 5 further comprising:

correcting the calibration of ~~a particular~~ the tube ~~is corrected~~ as a function of the aging of ~~this particular~~ the tube by~~:~~

~~in~~ making readings for ~~this particular~~ the tube, during subsequent uses, of measurements of the tube current I_{tube}, the heating current I_{ch}, and the applied high voltage V; and

~~in~~ carrying out a mathematical regression to determine coefficients α and β with which the heating current I_{ch}real to be applied to the tube is expressed in the form: I_{ch}real $= \alpha I_{ch}$calib $+ \beta$, ~~the form in which~~ where I_{ch}calib is the value of the heating current ~~such as it~~ that results from the calibration.

12. (currently amended) A computer program product having therein a program code comprising means for:

~~the~~ calibrating a radiation emission rate of ~~the~~ an X-ray source ~~is calibrated~~ as a function of a voltage applied between first and second emitting elements of the source and as a function of ~~the~~ a heating current of the ~~active~~ source in response to the source being active;

supplying the second element ~~is supplied~~ with high voltage relative to the first element;

adjusting a heating current of the second element ~~is adjusted~~ for an expected rate of radiation emission as a function of the calibration; and

carrying out the calibration ~~is carried out~~ by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating current and a first-order polynomial function of the voltage.

13. (currently amended) A data carrier comprising a medium having embedded therein a computer program code comprising means for:

~~the~~ calibrating a radiation emission rate of ~~the~~ an X-ray source ~~is calibrated~~ as a function of a voltage applied between first and second emitting elements of the source and as a function of ~~the~~ a heating current of the ~~active~~ source in response to the source being active;

supplying the second element ~~is supplied~~ with high voltage relative to the first element;

adjusting a heating current of the second element ~~is adjusted~~ for an expected rate of radiation emission as a function of the calibration; and

carrying out the calibration ~~is carried out~~ by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating current and a first-order polynomial function of the voltage.